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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,576	11/17/2000	Hua-Shuang Kong	5000.89A	5716
21176	7590	04/05/2004	EXAMINER	
SUMMA & ALLAN, P.A. 11610 NORTH COMMUNITY HOUSE ROAD SUITE 200 CHARLOTTE, NC 28277			KACKAR, RAM N	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/715,576	Applicant(s) KONG ET AL.	
	Examiner Ram N Kackar	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22, 24, 49 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22, 24, 49 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the appeal filed on 2/4/2004, PROSECUTION IS HEREBY REOPENED.

New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 22, 24 and 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas F Briody (US 3659552).

Thomas F Briody discloses a reactor vessel of quartz (Fig 1-13 and Col 2 lines 38-41) which would make it transparent to electromagnetic radiation, having a gas supply system (29),

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induction coils as a source of electromagnetic radiation (41), being barrel type (Fig 1), thermally responsive graphite (Col 1 lines 42-54), susceptor (15 and 16), spaced optimally to allow flow of reactive gases as well as allow them to heat each other (Fig 1), and plurality of pocket to receive substrates (Fig 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 22, 24 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmura et al (US 4848272).

Ohmura et al disclose a reactor vessel of quartz (Fig 1-1) which would make it transparent to electromagnetic radiation, having a gas supply system (10), induction coils as a source of electromagnetic radiation (13,14), being barrel type (Fig 1), thermally responsive (Col 1 lines 30-36 and Col 4 line 15-38), susceptor (5), spaced optimally to allow flow of reactive gases as well as allow them to heat each other (Fig 1), and plurality of pocket to receive substrates (Fig 1).

Since both inner and outer susceptors are of thermally responsive material and have reflective surfaces, exclusion of inner susceptor in Ohmura does not materially affect the way invention works except, that the capacity of substrates to be processed reduces.

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Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to remove the inner susceptor to reduce cost, since omission of an element with a corresponding omission of function is within the level of ordinary skill. *In re Wilson* 153 USPQ 740 (CCPA 1967); *In re Portz* 145 USPQ 397 (CCPA 1965); *In re Larson* 144 USPQ 347 (CCPA 1965); *In re Karlson* 136 USPQ 184 (CCPA 1963); *In re Listen* 58 USPQ 481 (CCPA 1943); *In re Porter* 20 USPQ 298 (CCPA 1934).

Also, it has been established that economics alone might provide sufficient motivation to one of ordinary skill in the art to depart from the prior art to reduce costs. *In re Farrenkopf* 219 USPQ 1 (Fed. Cir. 1983); *In re Thompson* 193 USPQ 275, 277 (CCPA 1976); *In re Clinton* 188 USPQ 365, 367 (CCPA 1976); *Ex parte Fuller* 172 USPQ 317 (PO BdPatApp 1971).

6. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas F Briody (US 3659552) in view of Martin et al (US 4579080).

Thomas F Briody discloses a reactor vessel containing thermally responsive graphite (Col 1 lines 42-54) but does not disclose graphite coated by silicon carbide.

Since it is well known that uncoated graphite may allow migration of carbon in to silicon substrate, silicon carbide is frequently used to coat graphite.

Martin et al disclose a reactor vessel containing susceptor made of a thermally responsive material, graphite coated with silicon carbide (Col 7 line 60) heated by induction coils as a source of electromagnetic radiation.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to coat graphite susceptor of Thomas F Briody by silicon carbide in order to prevent migration of carbon.

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Response to Amendment

Applicants amendment filed 2/4/2004 have been considered but the arguments are not persuasive.

Applicant's arguments in regards to Von Der Ropp are now moot in view of new grounds of rejection.

With respect to the rejection relying upon Ohmura et al, applicant argues that removing inner susceptor would defeat Ohmura function. This is not correct, since radiation from heated substrates would still allow unrestricted heat transfer to opposite substrates to reduce temperature gradient.

The applicant has not provided any standards about "spacing across the susceptor" to determine if spacing across the susceptor in Ohmura et al when inner susceptor has been removed will not be small enough. This determination should be done in the context of the embodiment, which is the basis of claim 49.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK

*P. Hassan-zadeh
primary Examiner
AU 1763*